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10/025,854	12/26/2001	Sang-Hyun Kim	SCH-0007	7556
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			ART UNIT	PAPER NUMBER
			2665	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,854

Applicant(s)

KIM ET AL.

Examiner

Cynthia L. Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 10-21 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Response to Arguments

Applicant's arguments filed 12/12/2005 have been fully considered but they are not persuasive. Regarding claims 1-7, the system of Doshi transmits to and from the ATM and PSTN networks, see Doshi figure 6 (voice calls are typically duplex communications, so calls routed from PSTN to mobile unit via the vocoder and ATM network would involve communication in both directions, see column 5, lines 26-40). Further, using a TDM bus to multiplex voice signals is known in the art; a TDM bus lends itself well to transport of real-time traffic such as voice, and to multiplexing different specific flows of traffic, such as different voice calls (see Krishnawamy, column 24, lines 19-20 and 38-43).

Applicant's arguments filed 12/12/2005 regarding claims 8 and 10-21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Krishnaswamy.

Regarding claim 1, an ATM interface that communicates an ATM cell signal from and to the ATM network is disclosed in Doshi, figure 6, elements 50 and 76 (showing a connection between the atm and the vocoder). A vocoder that communicates a voice signal from and to the PSTN by a channel is disclosed in Doshi, figure 6, element 76 (showing the DCS which contains the vocoder is connected to the PSTN via the legacy switch 10). A time division multiplex (TDM) bus that communicates a voice traffic signal between the ATM interface and the vocoder is missing from Doshi. However, Krishnaswamy discloses in column 24, lines 38-43, TDM buses being used to communicate voice signals with a PSTN (real time traffic, column 24, lines 19-20). It would have been obvious to one skilled in the art at the time of the invention to use a TDM bus in the system of Doshi. The motivation would be to devote capacity to specific data flows (calls) and preserve deterministic behavior.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Krishnaswamy in further view of Kramer and Baldwin.

Regarding claim 2, a central processing unit (CPU) that disassembles the ATM cell signal or reassembles disassembled cells in real time, according to the AAL2 Adaptation Layer 2 (AAL2) Common Part Sublayer (CPS) protocol and a Service Specific Convergence Sublayer (SSCS) protocol, and monitors and controls other function blocks is not specifically disclosed in Doshi. However, Doshi does disclose in figure 6, element 51, an ATM fabric switching controller, which would include a CPU.

Further, Baldwin discloses in column 4, lines 23-25 and 37-42 that AAL2 normally includes SSCS and segmentation and reassembly, and other functions. It would have been obvious to one skilled in the art at the time of the invention to use AAL2 as is disclosed in Baldwin in the system of Doshi. The motivation would be to use a type of AAL that is well suited for packet telephony (Baldwin, column 4, line 13). A memory that stores the voice traffic signal generated by a process of the CPU based on the AAL2 CPS and SSCS protocols and stores the voice traffic signal transferred from the vocoder and a memory interface that accesses the memory for memory data input and output is missing from Doshi. However, Kramer discloses in column 3, lines 55-63 a memory used in conjunction with a vocoder to minimize jitter in an IP-PSTN gateway. It would have been obvious to one skilled in the art at the time of the invention to use the memory of Kramer in the system of Doshi. The motivation would be to minimize jitter (Kramer, column 3, lines 53-55). A multiplex/demultiplex unit that demultiplexes the voice traffic signal received from the memory interface and outputs a demultiplexed result to the vocoder and multiplexes the voice traffic signal received from the vocoder and outputs a multiplexed result to the memory interface is disclosed in Doshi, figure 6, element 54 (the separator combiner acts as a mux/demux). A TDM interface that communicates the voice traffic signal with the vocoder over the TDM bus, synchronously with TDM timing is missing from Doshi. However, Krishnawamy discloses in column 24, lines 38-43, TDM buses being used to communicate voice signals with a PSTN (real time traffic, column 24, lines 19-20). It would have been obvious to one skilled in the art at the time of the invention to use a TDM bus in the

system of Doshi. The motivation would be to devote capacity to specific data flows (calls) and preserve deterministic behavior.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Krishnaswamy in further view of Kramer, Baldwin, and Victor.

Regarding claim 3, the multiplex/demultiplex unit is further adapted to convert first parallel signals received from the memory interface into a first serial signal, convert a second serial signal received from the TDM interface into second parallel signals, and output the converted second parallel signals to the memory interface is missing from Doshi. However, Victor discloses in column 15, lines 28-32, that the function of a mux/demux is to convert between serial and parallel signals. It would have been obvious to one skilled in the art at the time of the invention to have the mux/demux adapted to convert between serial and parallel signals. The motivation would be to have the mux/demux function as such components typically do.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Krishnaswamy in further view of Kramer and Victor.

Regarding claim 5, a TDM interface connected to the TDM bus, the TDM interface synchronizes timings of the voice traffic signal with TDM timing is missing from Doshi. However, Krishnaswamy discloses in column 24, lines 38-43, TDM buses being used to communicate voice signals with a PSTN (real time traffic, column 24, lines 19-20). It would have been obvious to one skilled in the art at the time of the invention to use a TDM bus in the system of Doshi. The motivation would be to devote capacity to specific data flows (calls) and preserve deterministic behavior. Communicating with the

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ATM interface is disclosed in Doshi, figure 6, element 75. Converts a serial voice traffic signal into parallel voice traffic signals is missing from Doshi. However, Doshi does disclose in figure 6, element 54, a separator/combiner that acts as a mux/demux. Also, Victor discloses in column 15, lines 28-32, that the function of a mux/demux is to convert between serial and parallel signals. It would have been obvious to one skilled in the art at the time of the invention to have the mux/demux adapted to convert between serial and parallel signals. The motivation would be to have the mux/demux function as such components typically do. A memory that stores the parallel voice traffic signals from the TDM interface and the voice signal from the PSTN; a memory interface that accesses the memory to read data from or write the data to the memory; and a CPU that periodically reads first voice data stored in the memory, transfers the read first voice data to a digital signal processor (DSP), and stores second voice data transferred from the DSP in the memory is missing from Doshi. However, Kramer discloses in column 3, lines 55-63 a memory used in conjunction with a processor (to perform read/writes) and a vocoder to minimize jitter in an IP-PSTN gateway. It would have been obvious to one skilled in the art at the time of the invention to use the memory of Kramer in the system of Doshi. The motivation would be to minimize jitter (Kramer, column 3, lines 53-55).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Krishnaswamy in further view of Kramer, Baldwin and Higgins.

Regarding claim 6, a most significant bit (MSB) comparator that latches a first MSB of data stored in the memory, compares the latched first MSB with a second MSB

generated to read the stored data, and outputs the generated second MSB as a read MSB if the first and second MSBs are the same thereby preventing a contention from occurring between a read operation and a write operation of the memory is missing from Doshi. However, Higgins discloses in column 11, lines 1-11, a memory read-write system that alternates between read and write based on the MSBs in the memory. It would have been obvious to one skilled in the art at the time of the invention to use the memory access method of Higgins in the system of Doshi. The motivation would be to be able to read and update an old metric value and store a new one without destroying the old state metric (Higgins, column 11, lines 16-19).

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Krishnaswamy in further view of Butler.

Regarding claim 7, a clock generator that provides a plurality of clock signals for frame synchronization and packet synchronization to the ATM interface and the vocoder is missing from Doshi. However, Butler discloses in column 12, lines 28-30, a master clock to control timing in a TDM voice processing system. It would have been obvious to one skilled in the art at the time of the invention to use the clock of Butler in the invention of Doshi. The motivation would be to control the timing of the system.

8. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Schrodinger, Krishnaswamy, Victor and Butler.

Regarding claim 8, communicating between an ATM network and a PSTN is disclosed in Doshi, column 5, lines 26-40, and figure 6. Demultiplexing a multiplexed stream of first parallel data units from the ATM network into multiple streams of second

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parallel data units and synchronizing the multiple streams of second parallel data units is missing from Doshi. This is disclosed in Schrodinger, column 2, lines 11-31 (the regeneration and propagation delay apparatuses process the initial n serial streams, which are transferred in parallel, into synchronized parallel data streams). It would have been obvious to one skilled in the art at the time of the invention to use the demultiplexing operation of Schrodinger in the system of Doshi. The motivation would be to regenerate data from a plurality of multiplexed data streams (Schrodinger, column 2, lines 14-16). Converting each of the multiple synchronized streams of second parallel data units into a stream of first serial data is missing from Doshi. However, Victor discloses in column 15, lines 28-32, that the function of a commonly used demux is to convert between serial and parallel signals. It would have been obvious to one skilled in the art at the time of the invention to have a demux adapted to convert between serial and parallel signals. The motivation would be to use a common type of component to adapt the signals. Communicating each of the streams of first serial data through a time division multiplex (TDM) bus in an assigned time slot is missing from Doshi. However, Krishnaswamy discloses in column 24, lines 38-43, TDM buses being used to communicate voice signals with a PSTN (real time traffic, column 24, lines 19-20). It would have been obvious to one skilled in the art at the time of the invention to use a TDM bus in the system of Doshi. The motivation would be to devote capacity to specific data flows (calls) and preserve deterministic behavior. Generating a voice signal from each of the streams of first serial data received through the TDM bus; and transmitting each of the generated voice signals to a destination through a public

switched telephone network is missing from Doshi. However, Butler discloses in column 3, lines 31-38, voice calls being routed to a PSTN via a gateway that includes a TDM bus, which would entail generating and transmitting voice signals. It would have been obvious to one skilled in the art at the time of the invention to use the TDM bus of Butler to route calls and generate voice signals in a PSTN. The motivation would be to be able to route voice channels on data packet networks (see Butler, column 1, lines 35-54 for some advantages of routing voice over the internet).

Regarding claim 10, communicating each of multiple streams of second serial data through the TDM bus in an assigned time slot is missing from Doshi. However, Butler discloses in column 1, lines 60-62 a TDM bus for transporting multiple telephone channels. It would have been obvious to one skilled in the art at the time of the invention to use the TDM bus of Butler in the system of Doshi. The motivation would be to use a well known, commercially available component that is useful for voice processing (see Butler, column 1, line 60-column 2, line 7). Converting each of the multiple streams of second serial data units into a stream of third parallel data units; and multiplexing the multiple streams of third parallel data units into a multiplexed stream of fourth parallel data units is missing from Doshi. However, Victor discloses in column 15, lines 28-32, that the function of a commonly used mux/demux is to convert between serial and parallel signals. It would have been obvious to one skilled in the art at the time of the invention to have a mux/demux adapted to convert between serial and parallel signals. The motivation would be to use a common type of component.

Regarding claim 11, encoding multiple voice signals, received through the public switched telephone network, into the corresponding multiple streams of second serial data is disclosed in Doshi, column 4, lines 8-26 (showing a system that encodes PSTN calls into atm data streams) .

Regarding claim 12, generating asynchronous transfer mode (ATM) packets from the multiplexed stream of fourth parallel data units; and transmitting the generated ATM packets through the ATM network is disclosed in Doshi, column 4, lines 8-26 (a system that encodes PSTN calls into atm data streams).

9. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Schrodinger, Krishnaswamy, Victor and Butler in further view of Higgins.

Regarding claim 13, comparing a first address bit corresponding to data stored in a memory to a second address bit generated for the purpose of reading the stored data; outputting the generated second address bit for use in a subsequent memory read operation if the first and second address bits have the same value, to prevent bus contention between a memory write operation and the memory read operation is missing from Doshi. However, Higgins discloses in column 11, lines 1-11, a memory read-write system that alternates between read and write based on the MSBs in the memory. It would have been obvious to one skilled in the art at the time of the invention to use the memory access method of Higgins in the system of Doshi. The motivation would be to be able to read and update an old metric value and store a new one without destroying the old state metric (Higgins, column 11, lines 16-19).

Regarding claim 14, toggling the value of the second address bit if the first and second address bits have different values; outputting the toggled second address bit for use in the subsequent memory read operation, to prevent bus contention between the memory read and write operations is missing from Doshi. However, Higgins discloses in column 11, lines 1-11, a memory read-write system that toggles an address bit. It would have been obvious to one skilled in the art at the time of the invention to use the memory access method of Higgins in the system of Doshi. The motivation would be to be able to read and update an old metric value and store a new one without destroying the old state metric (Higgins, column 11, lines 16-19).

10. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Schrodinger, Victor, and Krishnaswamy.

Regarding claim 15, a communication gateway between an ATM network and a PSTN is disclosed in Doshi, figure 6, and column 5, lines 26-40. A multiplexer/demultiplexer (demux) that demultiplexes a multiplexed stream of first parallel data units into multiple streams of second parallel data units and an aligner that aligns the multiple streams of second parallel data units is missing from Doshi. This is disclosed in Schrodinger, column 2, lines 11-31 (the regeneration and propagation delay apparatuses process the initial n serial streams, which are transferred in parallel, into synchronized parallel data streams; synchronizing involves aligning). It would have been obvious to one skilled in the art at the time of the invention to use the demultiplexing and synchronizing operation of Schrodinger in the system of Doshi. The motivation would be to regenerate data from a plurality of multiplexed data streams

(Schrodinger, column 2, lines 14-16). A time division multiplex (TDM) bus that communicates each of the streams of first serial data is missing from Doshi. However, Krishnaswamy discloses in column 24, lines 38-43, TDM buses being used to communicate voice signals with a PSTN (real time traffic, column 24, lines 19-20). It would have been obvious to one skilled in the art at the time of the invention to use a TDM bus in the system of Doshi. The motivation would be to devote capacity to specific data flows (calls) and preserve deterministic behavior. A parallel-to-serial converter that converts each of the multiple aligned streams of second parallel data units into a stream of first serial data; and a serial-to-parallel converter that receives each of the streams of first serial data from the TDM bus in an assigned time slot is missing from Doshi. However, Victor discloses in column 15, lines 28-32, that the function of a commonly used mux/demux is to convert between serial and parallel signals. It would have been obvious to one skilled in the art at the time of the invention to have a mux/demux adapted to convert between serial and parallel signals. The motivation would be to use a common type of component to adapt the signals. A PSTN that transmits generated voice signals to a destination at the PSTN and an ATM interface that generates ATM packets and transmits the generated ATM packets to the ATM network are disclosed in Doshi, figure 6 (showing a PSTN and an ATM network communicating with each other).

Regarding claim 17, the serial-to-parallel converter communicates each of multiple streams of second serial data through the TDM bus in an assigned time slot is missing from Doshi. However, Krishnaswamy discloses in column 24, lines 38-43, TDM buses with assigned timeslots being used to communicate voice signals with a PSTN

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(real time traffic, column 24, lines 19-20). It would have been obvious to one skilled in the art at the time of the invention to use a TDM bus in the system of Doshi. The motivation would be to devote capacity to specific data flows (calls) and preserve deterministic behavior. The parallel-to-serial converter converts each of the multiple streams of second serial data units into a stream of third parallel data units; and the demux multiplexes the multiple streams of third parallel data units into a multiplexed stream of fourth parallel data units is missing from Doshi. However, Victor discloses in column 15, lines 28-32, that the function of a commonly used mux/demux is to convert between serial and parallel signals. It would have been obvious to one skilled in the art at the time of the invention to have a mux/demux adapted to convert between serial and parallel signals. The motivation would be to use a common type of component to adapt the signals.

11. Claims 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Schrodinger, Victor, and Krishnaswamy in further view of Baldwin.

Regarding claim 16, multiple vocoders that each generate one of the generated voice signals from a separate one of the streams of first serial data received by the serial-to-parallel converter; the public switched telephone network interface that transmitting each of the generated voice signals to the destination at the PSTN are missing from Doshi. However, Baldwin discloses this in figure 4, elements 130 and 150 (showing vocoder groups connected to a PSTN). It would have been obvious to one

skilled in the art to have vocoders generate voice signals to transfer onto the PSTN.

The motivation would be to transfer the cells from atm to the pstn, as is done in Baldwin.

Regarding claim 18, multiple vocoders that encode multiple voice signals, received through the public switched telephone network interface, into the corresponding multiple streams of second serial data are missing from Doshi. However, Baldwin discloses this in figure 4, elements 130 and 150 (showing vocoder groups connected to a PSTN). It would have been obvious to one skilled in the art to have vocoders generate signals to transfer from the PSTN. The motivation would be to transfer the cells from the pstn to atm for fast transfer in the atm network, as is done in Baldwin.

Regarding claim 19, the asynchronous transfer mode (ATM) interface that generated the ATM packets from the multiplexed stream of fourth parallel data units and transmits the generated ATM packets to the ATM network is missing from Doshi. However, Baldwin discloses in figure 4, element 130 and 100 cells being generated and transferred into an atm network. It would have been obvious to one skilled in the art to have generate atm cells. The motivation would be to transfer the cells from the pstn to atm for fast transfer in the atm network, as is done in Baldwin.

12. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Schrodinger, Victor, and Krishnaswamy in further view of Higgins.

Regarding claim 20, a memory that stores data and a comparator that compares a first address bit, corresponding to the data stored in the memory with a second address bit generated for the purpose of reading the stored data, wherein the

comparator outputs the generated second address bit for use in a subsequent memory read operation if the first and second address bits have the same value, to prevent bus contention between a memory write operation and the memory read operation is missing from Schrodinger. However, Higgins discloses in column 11, lines 1-11, a memory read-write system that alternates between read and write based on the MSBs in the memory. It would have been obvious to one skilled in the art at the time of the invention to use the memory access method of Higgins in the system of Schrodinger. The motivation would be to be able to read and update an old metric value and store a new one without destroying the old state metric (Higgins, column 11, lines 16-19).

Regarding claim 21, the comparator toggles the value of the second address bit if the first and second address bits have different values; and outputs the toggled second address bit for use in the subsequent memory read operation, to prevent bus contention between the memory read and write operations is missing from Schrodinger. However, Higgins discloses in column 11, lines 1-11, a memory read-write system that toggles an address bit. It would have been obvious to one skilled in the art at the time of the invention to use the memory access method of Higgins in the system of Schrodinger. The motivation would be to be able to read and update an old metric value and store a new one without destroying the old state metric (Higgins, column 11, lines 16-19).

Allowable Subject Matter

13. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**